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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,216	03/26/2004	Hong-Da Liu	25313-1020	1933
24504	7590	09/07/2005		
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			EXAMINER MAKIYA, DAVID J	
			ART UNIT 2875	PAPER NUMBER

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/811,216

Applicant(s)

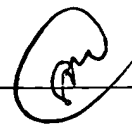
LIU, HONG-DA

Examiner

David J. Makiya

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings are objected to because Figures 1-4 are described as related art but fails to disclose whether the Figures are prior art and the name of the inventor of the related art. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: On page 7, Line 20, the applicant describes the reflective area that “gradually decreases from the periphery to the center.” This contradicts the description on Page 6, Lines 22-25 which says the “reflective area of the pixel in the central region is larger than the reflective area in the peripheral region.” The

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disclosure is also objected to because the characters A, α , and β (Page 7, Lines 1 and 3 and Page 8, Line 9) are not defined.

Appropriate correction is required.

Claim Objections

Claims 1 and 16 are objected to because of the following informalities: “the light intensity” fails to provide proper antecedent basis for the claimed subject matter. Because light intensity is an inherent characteristic in both a light supply and a display, a proper description is required. For examination purposes, the claims will be interpreted as “the light intensity of a flat panel display.” See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required.

Claim 11 is objected to because of the following informalities: “Guassian” on Line 2 of the claim appears to be misspelled. For examination purposes, the claim will be interpreted as a “Gaussian function.” Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-7, 9-18, and 20-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogiwara et al. (US Pub. No. 2003/0210222).

With respect to claim 1, Ogiwara et al. teaches a flat panel display 1 comprising a panel having a plurality of pixels 104, wherein each of the pixels comprises at least one reflective area

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41 and at least one transmissive area 42 and the ratio of the transmissive area of each pixel on the panel to the area of the pixel varies according to the distance from the pixel to the central position of the panel (Figure 1) and exhibits a first distribution function and a light module (151 and 103) supplying light to illuminate the panel, wherein the light intensity exhibits a second distribution function (Paragraph 6, Lines 7-9).

With respect to claims 2 and 17, Ogiwara et al. teaches the display wherein the light module comprises a light source 101 supplying the light and a light guide plate 103 guiding the light to the panel.

With respect to claims 3 and 18, Ogiwara et al. teaches an additional embodiment where the display further comprising a prism 1033 between the light source 1001 and the light guide plate 1003 to direct the light to the light guide plate.

With respect to claims 5 and 20, Ogiwara et al. teaches the display wherein the light guide plate has a plane structure (Figure 1).

With respect to claims 6 and 21, Ogiwara et al. teaches the display wherein the light guide plate is a backlight plate (Paragraph 8, Lines 1-3).

With respect to claims 7 and 22, Ogiwara et al. teaches the display wherein the light guide plate is a front light plate (Paragraph 250).

With respect to claims 9 and 23, Ogiwara et al. teaches the display wherein the first distribution function is a function complementary to a Gaussian function (Figure 1).

With respect to claims 10 and 24, Ogiwara et al. teaches the display wherein the first distribution function is a continuous function (Figure 1).

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With respect to claims 11 and 25, Ogiwara et al. teaches the display wherein the second distribution function is a Gaussian function (Paragraph 6).

With respect to claims 12 and 26, Ogiwara et al. teaches the display wherein the second distribution function is a continuous function (Paragraph 6).

With respect to claims 13 and 27, Ogiwara et al. teaches the display wherein the product of the first distribution function and the second distribution function is a continuous function because if the first and second functions are continuous, the product would also lead to a continuous function which would result in a high brightness display (Paragraph 6).

With respect to claims 14 and 28, Ogiwara et al. teaches the display wherein the ratio of the difference between the highest brightness and the lowest brightness supplied by the light module to the highest brightness supplied by the light module is within the range of 30% to 70% (Paragraph 13, Lines 4-5).

With respect to claim 15, Ogiwara et al. teaches the display wherein the ratio of the area of the transmissive area or the reflective area of the center pixel to the area of the transmissive area or the reflective area of the outermost pixel is between 0.2 or 5 (Paragraph 10, Lines 33-39).

With respect to claim 16, Ogiwara et al. teaches a flat panel display, at least comprising a panel having a plurality of pixels, wherein each of the pixels has indices of reflectivity and transmittivity (Paragraph 73) and the transmittivity of each pixel on the panel varies (Paragraph 6, Lines 1-3) according to the distance from the pixel to the central position of the panel and exhibits a first distribution function and a light module supplying light to illuminate the panel, wherein the light intensity exhibits a second distribution function (Paragraph 6, Lines 7-9).

With respect to claim 29, Ogiwara et al. teaches an additional embodiment of the display (Embodiment 18) wherein the ratio of index of the transmissive or the reflective of the center pixel to the index of the transmissive or the reflective of the outermost pixel is between 0.2 and 5 (Paragraph 369).

With respect to claim 30, Ogiwara et al. teaches the display wherein each pixel comprises a metal layer with reflective and transmissive capabilities (Paragraph 220).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 19, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiwara et al. in view of Kim et al. (US Patent 6,734,935).

With respect to claims 4 and 19, Ogiwara et al. teaches the display above, but fails to teach the light guide plate having an inclined plane structure. Kim et al. teaches the display wherein the light guide plate 90 has an inclined plane structure as shown in Figures 1 and 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display of Ogiwara et al. with the teachings of Kim et al. because having an inclined plane structure allows for light to quickly and evenly reflect through the display.

With respect to claim 31, Ogiwara et al. teaches the display above but fails to teach a display wherein each pixel comprises a multilayered film with reflective and transmissive capabilities. Kim et al. teaches a liquid crystal display device (Figures 1 and 2) wherein each

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pixel 20 comprises a multilayered film with reflective 22 and transmissive 21 capabilities. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display of Ogiwara et al. with the teachings of Kim et al. because making layers is an easy way to manufacture the display.

Claims 1, 2, 5-17, and 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the acknowledged prior art in view of Ogiwara et al.

The acknowledged prior art discloses the claimed flat panel display including a plurality of pixels having light reflective and transmissive areas and a light module. The acknowledged prior art does not disclose the claimed light distributions. Ogiwara et al. teaches providing a flat panel display having light distributions as claimed. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acknowledged prior art transmissive and reflective areas to provide the light distributions as taught by Ogiwara et al. One would have been motivated to so modify Ogiwara et al. for the benefit of a more visually pleasing and higher luminance screen.

Conclusion

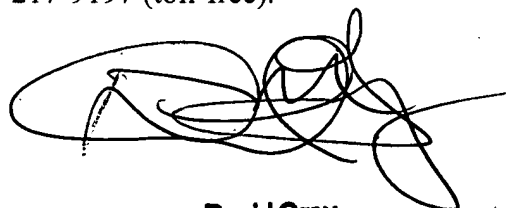
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsumoto (US Patent 5,386,347) teaches a light source with reflective pixel area varying from the distance from the center. Ishikawa (US Patent 5,921,651) teaches a surface light source with a varied distribution pattern of light. Kubo et al. (US Patent 6,452,654) teaches a liquid crystal display in which at least one pixel includes both a transmissive and reflective region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Makiya whose telephone number is (571) 272-2273. The examiner can normally be reached on Monday-Friday 7:30am - 4:00pm (ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on (571) 272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJM 8/30/2005

A handwritten signature in black ink, appearing to read 'David Gray', with a large, stylized flourish extending from the end of the signature.

David Gray
Primary Examiner